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<110> Dedhar, Shoukat
Hannigan, Greg

<120> Integrin-Linked Kinase and its Uses

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<151> 1995-12-21

<150> 08/752,345
<151> 1996-11-19

<150> 08/955,841
<151> 1997-10-21

<150> 09/935,706
<151> 1998-03-05

<150> 09/390,425
<151> 1999-09-03

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tccccaatcc aggggactcg gcgccgggac gctgct atg gac gac att ttc act 174
Met Asp Asp Ile Phe Thr
1 5

cag tgc cgg gag ggc aac gca gtc gcc gtt cgc ctg tgg ctg gac aac 222
Gln Cys Arg Glu Gly Asn Ala Val Ala Val Arg Leu Trp Leu Asp Asn
10 15 20

acg gag aac gac ctc aac cag ggg gac gat cat ggc ttc tcc ccc ttg 270
Thr Glu Asn Asp Leu Asn Gln Gly Asp Asp His Gly Phe Ser Pro Leu
25 30 35

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cac tgg gcc tgc cga gag ggc cgc tct gct gtg gtt gag atg ttg atc      318
His Trp Ala Cys Arg Glu Gly Arg Ser Ala Val Val Glu Met Leu Ile
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atg cgg ggg gca cgg atc aat gta atg aac cgt ggg gat gac acc ccc      366
Met Arg Gly Ala Arg Ile Asn Val Met Asn Arg Gly Asp Asp Thr Pro
 55                  60                  65                  70

ctg cat ctg gca gcc agt cat gga cac cgt gat att gta cag aag cta      414
Leu His Leu Ala Ala Ser His Gly His Arg Asp Ile Val Gln Lys Leu
                 75                  80                  85

ttg cag tac aag gca gac atc aat gca gtg aat gaa cac ggg aat gtg      462
Leu Gln Tyr Lys Ala Asp Ile Asn Ala Val Asn Glu His Gly Asn Val
             90                  95                 100

ccc ctg cac tat gcc tgt ttt tgg ggc caa gat caa gtg gca gag gac      510
Pro Leu His Tyr Ala Cys Phe Trp Gly Gln Asp Gln Val Ala Glu Asp
        105                 110                 115

ctg gtg gca aat ggg gcc ctt gtc agc atc tgt aac aag tat gga gag      558
Leu Val Ala Asn Gly Ala Leu Val Ser Ile Cys Asn Lys Tyr Gly Glu
    120                 125                 130

atg cct gtg gac aaa gcc aag gca ccc ctg aga gag ctt ctc cga gag      606
Met Pro Val Asp Lys Ala Lys Ala Pro Leu Arg Glu Leu Leu Arg Glu
135                 140                 145                 150

cgg gca gag aag atg ggc cag aat ctc aac cgt att cca tac aag gac      654
Arg Ala Glu Lys Met Gly Gln Asn Leu Asn Arg Ile Pro Tyr Lys Asp
                155                 160                 165

aca ttc tgg aag ggg acc acc cgc act cgg ccc cga aat gga acc ctg      702
Thr Phe Trp Lys Gly Thr Thr Arg Thr Arg Pro Arg Asn Gly Thr Leu
            170                 175                 180

aac aaa cac tct ggc att gac ttc aaa cag ctt aac ttc ctg acg aag      750
Asn Lys His Ser Gly Ile Asp Phe Lys Gln Leu Asn Phe Leu Thr Lys
        185                 190                 195

ctc aac gag aat cac tct gga gag cta tgg aag ggc cgc tgg cag ggc      798
Leu Asn Glu Asn His Ser Gly Glu Leu Trp Lys Gly Arg Trp Gln Gly
    200                 205                 210

aat gac att gtc gtg aag gtg ctg aag gtt cga gac tgg agt aca agg      846
Asn Asp Ile Val Val Lys Val Leu Lys Val Arg Asp Trp Ser Thr Arg
215                 220                 225                 230

aag agc agg gac ttc aat gaa gag tgt ccc cgg ctc agg att ttc tcg      894
Lys Ser Arg Asp Phe Asn Glu Glu Cys Pro Arg Leu Arg Ile Phe Ser
                235                 240                 245

cat cca aat gtg ctc cca gtg cta ggt gcc tgc cag tct cca cct gct      942
His Pro Asn Val Leu Pro Val Leu Gly Ala Cys Gln Ser Pro Pro Ala
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cct cat cct act ctc atc aca cac tgg atg ccg tat gga tcc ctc tac      990
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Pro His Pro Thr Leu Ile Thr His Trp Met Pro Tyr Gly Ser Leu Tyr
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aat gta cta cat gaa ggc acc aat ttc gtc gtg gac cag agc cag gct     1038
Asn Val Leu His Glu Gly Thr Asn Phe Val Val Asp Gln Ser Gln Ala
    280                 285                 290

gtg aag ttt gct ttg gac atg gca agg ggc atg gcc ttc cta cac aca     1086
Val Lys Phe Ala Leu Asp Met Ala Arg Gly Met Ala Phe Leu His Thr
295                 300                 305                 310

cta gag ccc ctc atc cca cga cat gca ctc aat agc cgt agt gta atg     1134
Leu Glu Pro Leu Ile Pro Arg His Ala Leu Asn Ser Arg Ser Val Met
                315                 320                 325

att gat gag gac atg act gcc cga att agc atg gct gat gtc aag ttc     1182
Ile Asp Glu Asp Met Thr Ala Arg Ile Ser Met Ala Asp Val Lys Phe
            330                 335                 340

tct ttc caa tgt cct ggt cgc atg tat gca cct gcc tgg gta gcc ccc     1230
Ser Phe Gln Cys Pro Gly Arg Met Tyr Ala Pro Ala Trp Val Ala Pro
        345                 350                 355

gaa gct ctg cag aag aag cct gaa gac aca aac aga cgc tca gca gac     1278
Glu Ala Leu Gln Lys Lys Pro Glu Asp Thr Asn Arg Arg Ser Ala Asp
    360                 365                 370

atg tgg agt ttt gca gtg ctt ctg tgg gaa ctg gtg aca cgg gag gta     1326
Met Trp Ser Phe Ala Val Leu Leu Trp Glu Leu Val Thr Arg Glu Val
375                 380                 385                 390

ccc ttt gct gac ctc tcc aat atg gag att gga atg aag gtg gca ttg     1374
Pro Phe Ala Asp Leu Ser Asn Met Glu Ile Gly Met Lys Val Ala Leu
                395                 400                 405

gaa ggc ctt cgg cct acc atc cca cca ggt att tcc cct cat gtg tgt     1422
Glu Gly Leu Arg Pro Thr Ile Pro Pro Gly Ile Ser Pro His Val Cys
            410                 415                 420

aag ctc atg aag atc tgc atg aat gaa gac cct gca aag cga ccc aaa     1470
Lys Leu Met Lys Ile Cys Met Asn Glu Asp Pro Ala Lys Arg Pro Lys
        425                 430                 435

ttt gac atg att gtg cct atc ctt gag aag atg cag gac aag             1512
Phe Asp Met Ile Val Pro Ile Leu Glu Lys Met Gln Asp Lys
    440                 445                 450

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cctccccaaa gcagcaggcc tctggttgcc tcccccgcct ccagtcatgg tactacccca   1632
gcctggggtc catccccttc ccccatccct accactgtgc gcaagagggg cgggctcaga   1692
gctttgtcac ttgccacatg gtgtctccca acatgggagg gatcagcccc gcctgtcaca   1752
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<213> Homo sapiens
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            20                  25                  30
His Gly Phe Ser Pro Leu His Trp Ala Cys Arg Glu Gly Arg Ser Ala
        35                  40                  45
Val Val Glu Met Leu Ile Met Arg Gly Ala Arg Ile Asn Val Met Asn
    50                  55                  60
Arg Gly Asp Asp Thr Pro Leu His Leu Ala Ala Ser His Gly His Arg
65                  70                  75                  80
Asp Ile Val Gln Lys Leu Leu Gln Tyr Lys Ala Asp Ile Asn Ala Val
                85                  90                  95
Asn Glu His Gly Asn Val Pro Leu His Tyr Ala Cys Phe Trp Gly Gln
            100                 105                 110
Asp Gln Val Ala Glu Asp Leu Val Ala Asn Gly Ala Leu Val Ser Ile
        115                 120                 125
Cys Asn Lys Tyr Gly Glu Met Pro Val Asp Lys Ala Lys Ala Pro Leu
    130                 135                 140
Arg Glu Leu Leu Arg Glu Arg Ala Glu Lys Met Gly Gln Asn Leu Asn
145                 150                 155                 160
Arg Ile Pro Tyr Lys Asp Thr Phe Trp Lys Gly Thr Thr Arg Thr Arg
                165                 170                 175
Pro Arg Asn Gly Thr Leu Asn Lys His Ser Gly Ile Asp Phe Lys Gln
            180                 185                 190
Leu Asn Phe Leu Thr Lys Leu Asn Glu Asn His Ser Gly Glu Leu Trp
        195                 200                 205
Lys Gly Arg Trp Gln Gly Asn Asp Ile Val Val Lys Val Leu Lys Val
    210                 215                 220
Arg Asp Trp Ser Thr Arg Lys Ser Arg Asp Phe Asn Glu Glu Cys Pro
225                 230                 235                 240
Arg Leu Arg Ile Phe Ser His Pro Asn Val Leu Pro Val Leu Gly Ala
                245                 250                 255
Cys Gln Ser Pro Pro Ala Pro His Pro Thr Leu Ile Thr His Trp Met
            260                 265                 270
Pro Tyr Gly Ser Leu Tyr Asn Val Leu His Glu Gly Thr Asn Phe Val
        275                 280                 285
Val Asp Gln Ser Gln Ala Val Lys Phe Ala Leu Asp Met Ala Arg Gly
    290                 295                 300
Met Ala Phe Leu His Thr Leu Glu Pro Leu Ile Pro Arg His Ala Leu
305                 310                 315                 320
Asn Ser Arg Ser Val Met Ile Asp Glu Asp Met Thr Ala Arg Ile Ser
                325                 330                 335
Met Ala Asp Val Lys Phe Ser Phe Gln Cys Pro Gly Arg Met Tyr Ala
            340                 345                 350
Pro Ala Trp Val Ala Pro Glu Ala Leu Gln Lys Lys Pro Glu Asp Thr
        355                 360                 365
Asn Arg Arg Ser Ala Asp Met Trp Ser Phe Ala Val Leu Leu Trp Glu
    370                 375                 380
Leu Val Thr Arg Glu Val Pro Phe Ala Asp Leu Ser Asn Met Glu Ile
385                 390                 395                 400
Gly Met Lys Val Ala Leu Glu Gly Leu Arg Pro Thr Ile Pro Pro Gly
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Ile Ser Pro His Val Cys Lys Leu Met Lys Ile Cys Met Asn Glu Asp
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Met Gln Asp Lys
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His Gly Phe Ser Pro Leu His Trp Ala Cys Arg Glu Gly Arg Ser Ala
        35                  40                  45
Val Val Glu Met Leu Ile Met Arg Gly Ala Arg Ile Asn Val Met Asn
    50                  55                  60
Arg Gly Asp Asp Thr Pro Leu His Leu Ala Ala Ser His Gly His Arg
65                  70                  75                  80
Asp Ile Val Gln Lys Leu Leu Gln Tyr Lys Ala Asp Ile Asn Ala Val
                85                  90                  95
Asn Glu His Gly Asn Val Pro Leu His Tyr Ala Cys Phe Trp Gly Gln
            100                 105                 110
Asp Gln Val Ala Glu Asp Leu Val Ala Asn Gly Ala Leu Val Ser Ile
        115                 120                 125
Cys Asn Lys Tyr Gly Glu Met Pro Val Asp Lys Ala Lys Ala Pro Leu
    130                 135                 140
Arg Glu Leu Leu Arg Glu Arg Ala Glu Lys Met Gly Gln Asn Leu Asn
145                 150                 155                 160
Arg Ile Pro Tyr Lys Asp Thr Phe Trp Lys Gly Thr Thr Arg Thr Arg
                165                 170                 175
Pro Arg Asn Gly Thr Leu Asn Lys His Ser Gly Ile Asp Phe Lys Gln
            180                 185                 190
Leu Asn Phe Leu Thr Lys Leu Asn Glu Asn His Ser Gly Glu Leu Trp
        195                 200                 205
Lys Gly Arg Trp Gln Gly Asn Asp Ile Val Val Lys Val Leu Lys Val
    210                 215                 220
Arg Asp Trp Ser Thr Arg Lys Ser Arg Asp Phe Asn Glu Glu Cys Pro
225                 230                 235                 240
Arg Leu Arg Ile Phe Ser His Pro Asn Val Leu Pro Val Leu Gly Ala
                245                 250                 255
Cys Gln Ser Pro Pro Ala Pro His Pro Thr Leu Ile Thr His Trp Met
            260                 265                 270
Pro Tyr Gly Ser Leu Tyr Asn Val Leu His Glu Gly Thr Asn Phe Val
        275                 280                 285
Val Asp Gln Ser Gln Ala Val Lys Phe Ala Leu Asp Met Ala Arg Gly
    290                 295                 300
Met Ala Phe Leu His Thr Leu Glu Pro Leu Ile Pro Arg His Ala Leu
305                 310                 315                 320
Asn Ser Arg Ser Val Met Ile Asp Glu Asp Met Thr Ala Arg Ile Ser
                325                 330                 335
Met Ala Asp Val Lys Phe Ser Phe Gln Cys Pro Gly Arg Met Tyr Ala
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            340                 345                 350
Pro Ala Trp Val Ala Pro Glu Ala Leu Gln Lys Lys Pro Glu Asp Thr
        355                 360                 365
Asn Arg Arg Ser Ala Asp Met Trp Ser Phe Ala Val Leu Leu Trp Glu
    370                 375                 380
Leu Val Thr Arg Glu Val Pro Phe Ala Asp Leu Ser Asn Met Glu Ile
385                 390                 395                 400
Gly Met Lys Val Ala Leu Glu Gly Leu Arg Pro Thr Ile Pro Pro Gly
                405                 410                 415
Ile Ser Pro His Val Cys Lys Leu Met Lys Ile Cys Met Asn Glu Asp
            420                 425                 430
Pro Ala Lys Arg Pro Lys Phe Asp Met Ile Val Pro Ile Leu Glu Lys
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Met Gln Asp Lys
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<213> Homo sapiens

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            20                  25                  30
Ile Lys Thr Leu Lys Pro Gly Thr Met Met Pro Glu Ala Phe Leu Gln
        35                  40                  45
Glu Ala Gln Ile Met Lys Lys Leu Arg His Asp Lys Leu Val Pro Leu
    50                  55                  60
Tyr Ala Val Val Ser Glu Glu Pro Ile Tyr Ile Val Thr Glu Phe Met
65                  70                  75                  80
Thr Lys Gly Ser Leu Leu Asp Phe Leu Lys Glu Gly Glu Gly Lys Phe
                85                  90                  95
Leu Lys Leu Pro Gln Leu Val Asp Met Ala Ala Gln Ile Ala Asp Gly
            100                 105                 110
Met Ala Tyr Ile Glu Arg Met Asn Tyr Ile His Arg Asp Leu Arg Ala
        115                 120                 125
Ala Asn Ile Leu Val Gly Asp Asn Leu Val Cys Lys Ile Ala Asp Phe
    130                 135                 140
Gly Leu Ala Arg Leu Ile Glu Asp Asn Glu Tyr Thr Ala Arg Gln Gly
145                 150                 155                 160
Ala Lys Phe Pro Ile Lys Trp Thr Ala Pro Glu Ala Ala Leu Tyr Gly
                165                 170                 175
Arg Phe Thr Ile Lys Ser Asp Val Trp Ser Phe Gly Ile Leu Leu Thr
            180                 185                 190
Glu Leu Val Thr Lys Gly Arg Val Pro Tyr Pro Gly Met Val Asn Arg
        195                 200                 205
Glu Val Leu Glu Gln Val Glu Arg Gly Tyr Arg Met Pro Cys Pro Gln
    210                 215                 220
Gly Cys Pro Glu Ser Leu His Glu Leu Met Lys Leu Cys Trp Lys Lys
225                 230                 235                 240
Asp Pro Asp Glu Arg Pro Thr Phe Glu Tyr Ile Gln Ser Phe Leu Glu
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<212> PRT
<213> Homo sapiens

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Phe Gly Thr Val His Arg Ala Glu Trp His Gly Ser Asp Val Ala Val
20 25 30
Lys Ile Leu Met Glu Gln Asp Phe His Ala Glu Arg Val Asn Glu Phe
35 40 45
Leu Arg Glu Val Ala Ile Met Lys Arg Leu Arg His Pro Asn Ile Val
50 55 60
Leu Phe Met Gly Ala Val Thr Gln Pro Pro Asn Leu Ser Ile Val Thr
65 70 75 80
Glu Tyr Leu Ser Arg Gly Ser Leu Tyr Arg Leu Leu His Lys Ser Gly
85 90 95
Ala Arg Glu Gln Leu Asp Glu Arg Arg Arg Leu Ser Met Ala Tyr Asp
100 105 110
Val Ala Lys Gly Met Asn Tyr Leu His Asn Arg Asn Pro Pro Ile Val
115 120 125
His Arg Asp Leu Lys Ser Pro Asn Leu Leu Val Asp Lys Lys Tyr Thr
130 135 140
Val Lys Val Cys Asp Phe Gly Leu Ser Arg Leu Lys Ala Ser Thr Phe
145 150 155 160
Leu Ser Ser Lys Ser Ala Ala Gly Thr Pro Glu Trp Met Ala Pro Glu
165 170 175
Val Leu Arg Asp Glu Pro Ser Asn Glu Lys Ser Asp Val Tyr Ser Phe
180 185 190
Gly Val Ile Leu Trp Glu Leu Ala Thr Leu Gln Gln Pro Trp Gly Asn
195 200 205
Leu Asn Pro Ala Gln Val Val Ala Ala Val Gly Phe Lys Cys Lys Arg
210 215 220
Leu Glu Ile Pro Arg Asn Leu Asn Pro Gln Val Ala Ala Ile Ile Glu
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Gly Cys Trp Thr Asn Glu Pro Trp Lys Arg Pro Ser Phe Ala Thr Ile
245 250 255
Met Asp Leu Leu Arg Pro Leu
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Phe Gly Thr Val Tyr Lys Gly Lys Trp His Gly Asp Val Ala Val Lys
            20                  25                  30
Met Leu Asn Val Thr Ala Pro Thr Pro Gln Gln Leu Gln Ala Phe Lys
        35                  40                  45
Asn Glu Val Gly Val Leu Arg Lys Thr Arg His Val Asn Ile Leu Leu
    50                  55                  60
Phe Met Gly Tyr Ser Thr Lys Pro Gln Leu Ala Ile Val Thr Gln Trp
65                  70                  75                  80
Cys Glu Gly Ser Ser Leu Tyr His His Leu His Ile Ile Glu Thr Lys
                85                  90                  95
Phe Glu Met Ile Lys Leu Ile Asp Ile Ala Arg Gln Thr Ala Gln Gly
            100                 105                 110
Met Asp Tyr Leu His Ala Lys Ser Ile Ile His Arg Asp Leu Lys Ser
        115                 120                 125
Asn Asn Ile Phe Leu His Glu Asp Leu Thr Val Lys Ile Gly Asp Phe
    130                 135                 140
Gly Leu Ala Thr Val Lys Ser Arg Trp Ser Gly Ser His Gln Phe Glu
145                 150                 155                 160
Gln Leu Ser Gly Ser Ile Leu Trp Met Ala Pro Glu Val Ile Arg Met
                165                 170                 175
Gln Asp Lys Asn Pro Tyr Ser Phe Gln Ser Asp Val Tyr Ala Phe Gly
            180                 185                 190
Ile Val Leu Tyr Glu Leu Met Thr Gly Gln Leu Pro Tyr Ser Asn Ile
        195                 200                 205
Asn Asn Arg Asp Gln Ile Ile Phe Met Val Gly Arg Gly Tyr Leu Ser
    210                 215                 220
Pro Asp Leu Ser Lys Val Arg Ser Asn Cys Pro Lys Ala Met Lys Arg
225                 230                 235                 240
Leu Met Ala Glu Cys Leu Lys Lys Lys Arg Asp Glu Arg Pro Leu Phe
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Pro Gln Ile Leu Ala Ser Ile Glu Leu Leu Ala Arg Ser Leu Pro
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<400> 10
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Thr Ser Asp Ala
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